We claim:

1. (original) A method for making doped metal nitride powders comprising the steps of:

forming a metal-dopant alloy, and subjecting the metal-dopant alloy to a temperature between 900°C and 1200°C in an ammonia flow to react the ammonia with the metal-dopant alloy to produce a crystalline structure characterized by:

hexagonal platelets having a small distribution in size, and

large columnar micro-crystals having a large distribution in size,

wherein both the platelets and micro-crystals have a well defined wurtzite crystalline structure.

2. (original) The method of claim 1, wherein the metal is gallium.

3. (original) The method of claim 1, wherein the metal is indium.

4. (original) The method of claim 1, wherein the metal is aluminum.

5. (original) The method of claim 1, wherein the metal is a mixture of aluminum and gallium.

6. (original) The method of claim 1, wherein the metal is a mixture of indium and gallium.

7. (original) The method of claim 1, wherein the metal is a mixture of aluminum and indium.

8. (original) The method of claim 1, wherein the metal is a mixture of indium, aluminum, and gallium.

9. (original) The method of claim 1, wherein the dopant is magnesium.

10. (original) The method of claim 1, wherein the dopant is zinc.

11. (original) The method of claim 1, wherein the dopant is silicon.

12. (original) The method of claim 1, wherein the dopant is a mixture of silicon and magnesium.

13. (original) The method of claim 1, wherein the dopant is a mixture of a donor impurity and an acceptor impurity.

14. (original) The method of claim 1, wherein the solid crystalline product is ground in a mortar to produce a powder.

15. (original) The method of claim 14, wherein the powder is subjected to further annealing.

16. (original) The method of claim 1, wherein the metal is of a high purity, greater than about 99 weight %; the dopant chunks are of a high purity, greater than about 99 weight %; and the ammonia is of a high purity, greater than about 99 weight %.

17. (original) The method of claim 1, wherein the metal-dopant alloy is subjected to a vacuum of about 0.001 Torr or greater vacuum.

18. (original) The method of claim 1, wherein the ammonia flow is 200 $cm^3$/min or greater.

19. (original) A method for making doped metal-nitride powders comprising the steps of:

melting a metal;

placing the resulting melt and small chunks of a dopant in a first vessel;

placing the first vessel in a second larger vessel that is sealed, under vacuum and at a temperature between 500°C and 1000°C;

mechanically mixing the second vessel for several hours to produce a metal-dopant alloy;

placing the resulting metal-dopant alloy in a third vessel;

placing the third vessel in a cold zone of a reactor;

closing the reactor and evacuating the reactor to create a vacuum;

heating the reactor until a hot zone of the reactor reaches a temperature

between about 1100°C and about 1200°C;

conducting ammonia through the reactor until steady state conditions are reached;

placing the third vessel in the hot zone of the reactor for one or more hours to produce a solid crystalline structure in the third vessel;

placing the third vessel in the cold zone of the reactor and allowing the solid crystalline structure to cool to room temperature and removing the solid crystalline structure from the reactor.

20. (original) The method of claim 19, wherein the metal is gallium.

21. (original) The method of claim 19, wherein the metal is indium.

22. (original) The method of claim 19, wherein the metal is aluminum.

23. (original) The method of claim 19, wherein the metal is a mixture of aluminum and gallium.

24. (original) The method of claim 19, wherein the metal is a mixture of indium and gallium.

25. (original) The method of claim 19, wherein the metal is a mixture of aluminum and indium.

26. (original) The method of claim 19, wherein the metal is a mixture of indium, aluminum, and gallium.

27. (original) The method of claim 19, wherein the dopant is silicon.

28. (original) The method of claim 19, wherein the dopant is magnesium.

29. (original) The method of claim 19, wherein the dopant is zinc.

30. (original) The method of claim 19, wherein the dopant is a mixture of silicon and magnesium.

31. (original) The method of claim 19, wherein the dopant is a mixture of a donor impurity and an acceptor impurity.

32. (original) The method of claim 19, wherein the solid crystalline product is ground in a mortar to produce a powder.

33. (original) The method of claim 32, wherein the powder is subjected to further annealing.

34. (original) The method of claim 19, wherein the gallium metal is of a high purity, greater than about 99 weight %; the dopant chunks are of a high purity, greater than about 99 weight %; and the ammonia is of a high purity, greater than about 99 weight %.

35. (original) The method of claim 19, wherein the reactor is a horizontal quartz tube reactor.

36. (original) The method of claim 19, wherein the second vessel is made of stainless steel and the second vessel is evacuated to a vacuum of about 0.001 Torr or greater vacuum.

37. (original) The method of claim 19, wherein the reactor is evacuated to a vacuum of about 0.001 Torr or greater vacuum.

38. (original) The method of claim 19, wherein ammonia is conducted through the reactor at a rate of 200 $cm^3$/min or greater.

39. (currently amended) Doped metal nitride powder made by the method of ~~claims 1-38~~claim 1.